

Abstract Submitted
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Training Ultrafast Laser Pulses¹ RUSLAN AVERIN, N. WELLS, M. TODT, N. SMOLNISKY, N. JASTRAM, B. JOCHIM, N. GREGERSON, E. WELLS, Department of Physics, Augustana College, Sioux Falls, SD 57197, A. SAYLER, J. MCKENNA, K. CARNES, I. BEN-ITZHAK, M.F. KLING, J.R. Macdonald Laboratory, Department of Physics, Kansas State University, Manhattan, KS 66506 — Closed loop control of molecular processes utilizing shaped ultrafast laser pulses has been around for a number of years, yet this type of control has primarily utilized Time of Flight ion yield data for feedback. We present experiments using Velocity Map Imaging (VMI) as the feedback source for the closed loop control. Using VMI allows for pulse optimization not only with respect to the dissociation species but also angular information of the final state. We demonstrate the feasibility of incorporating this kind of feedback into the control loop. Using this technique, we controlled the dissociation branching ratio of CO^+ into C^{++}O or C^+O^+ and used the VMI information to recover additional information about the control mechanism.

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